**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 70.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Pursell, Gary
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-002870
**Date Inspected:** 29-May-2008

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** Japan Steel Works

**OSM Arrival Time:** 1100
**OSM Departure Time:** 1900
**Location:** Muroran, Japan

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|---|---|---|---|---|---|---|---|
| **CWI Name:** | Kuan Chung | | | **CWI Present:** | ☑ Yes | ☐ No | |
| **Inspected CWI report:** | ☐ Yes | ☑ No | ☐ N/A | **Rod Oven in Use:** | ☑ Yes | ☐ No | ☐ N/A |
| **Electrode to specification:** | ☑ Yes | ☐ No | ☐ N/A | **Weld Procedures Followed:** | ☑ Yes | ☐ No | ☐ N/A |
| **Qualified Welders:** | ☑ Yes | ☐ No | ☐ N/A | **Verified Joint Fit-up:** | ☑ Yes | ☐ No | ☐ N/A |
| **Approved Drawings:** | ☑ Yes | ☐ No | ☐ N/A | **Approved WPS:** | ☑ Yes | ☐ No | ☐ N/A |
| | | | | **Delayed / Cancelled:** | ☐ Yes | ☑ No | ☐ N/A |

**Bridge No:** 34-0006
**Component:** Tower,Jacking and Deviation Saddle

**Summary of Items Observed:**

The following report is based on METS observations at Japan Steel Works (JSW) in Muroran Japan. Current work: Casting, machining and repair of Saddles.

Fabrication Building number 4
W2-E2

On this date the Caltrans Quality Assurance (QA) inspector, Dong J, Shin arrived at JSW fabrication shop number 4 and observed the in process assembly fit-up operation of the structural steel plates for the West Deviation Saddle base W2E2. The JSW fitter personnel Kiyotaka Koanagi began assembly of the West Deviation Saddle base W2E2 by aligning the stem plate on the base plate, joint designation E2S-2L. The JSW welding personnel Yoshihiro Ohta, identified as number 08-2017 performed the in process tack welding utilizing the Shielded Metal Arc Welding (SMAW) process per the welding procedure specification (WPS) SJ-3011-1. After the stem plate was tack welded in place, Mr. Koanagi set rib number 12 plates in place on the base plate.

W2E1

Mr. K, kobayashi and Mr.Tatsuya Naitoh tack welding on W2E1 tack weld repair area, additional tack welds, and added three passes on the top of existing tack welds. Cracked tack welds grind out all weld metals and NISC NDT technician Mr. Rikuo Kumagai performed magnetic particle testing base metal after ground out weld metal.
The tack welding of the rib plate, joint designation E2Y-12L and E2Y-12V, was performed utilizing the Shielded Metal Arc Welding (SMAW) process per the welding procedure specification (WPS) SJ-3011-2 and SJ-3011-3. The welding was performed in the 2G (Horizontal) and 3G (Vertical) positions. The filler metal utilized was

identified as 4.0mm and 4.8mm diameter, Class E9018-M-H4R, Brand name Hoballoy 9018-M. The welding parameters and heat control were monitored by Intertek Testing Services Quality Control (QC) inspector Mr. Chung-Fu Kuan at periodic intervals. The minimum preheat temperature of 160 degrees Celsius and maximum interpass temperature of 260 degrees Celsius was verified to meet the WPS requirements by Mr. Kuan and the QA inspector utilizing Tempilstik temperature indicators. This data was entered into the QC inspector's daily log, identifying the location on a weld map. The SMAW welding average amperage and voltage by clamp type meter and travel speed were verified to be within the welding procedure specification parameter range of 245 amps to 270 amps, 22 volts to 25 volts and travel speed of 132 to 168 mm per minute for the 4.8mm electrode and 145 amps to 165 amps, 21 volts to 24 volts and travel speed of 72 to 97 mm per minute for the 4.0mm electrode by the QA inspector. The work was not completed on this date and appears to meet the minimum requirements of the welding procedure specification and contract documents.

2. QA Inspector performed 10% verification Magnetic Particle testing on tack weld area. The testing was performed after NISC testing.

**Summary of Conversations:**

No specific conversations.

**Comments**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Venkatesh Iyer, (858) 967-6363, who represents the Office of Structural Materials for your project.

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| **Inspected By:** | Shin,DJ | Quality Assurance Inspector |
| **Reviewed By:** | Lanz,Joe | QA Reviewer |